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NATIONAL COMMUNICABLE DISEASE CENTER

Morbidity and Mortality

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WEEKLY REPORT

Week Ending June 29, 1968

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

PUBLIC HEALTH SERVICE

HEALTH SERVICES AND MENTAL HEALTH ADMINISTRATION

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EPIDEMIOLOGIC NOTES AND REPORTS

FOLLOW-UP BOVINE CYSTICERCOSIS – Texas

Intensive investigation of the epizootic of bovine cysticercosis which occurred in March 1968 in cattle from feedlots in northern Texas (MMWR, Vol. 17, Nos. 16 and 23) has recently been completed. The following information summarizes the epidemiologic findings at the feedlots near Gruver and Hereford, Texas, where the infected cattle originated.

Investigation near Gruver, Texas, at Feedlot A

Feedlot A, located near Gruver, Texas, is a commercial feedlot with a capacity for 8,000 cattle. The cattle are shipped to the feedlot from many sources for intensive feeding. On arrival, cattle are put in one of 34 pens at the feedlot. While at the feedlot one pen of animals is never mixed with another pen. Cattle are fed on consignment and careful records are maintained of the amount and type of feed given to cattle in each pen. The cattle are fed hay

(Continued on page 242)

TABLE I. CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES
(Cumulative totals include revised and delayed reports through previous weeks)

DISEASE	26th WEEK ENDED		MEDIAN	CUMULATIVE, FIRST 26 WEEKS		
	June 29, 1968	July 1, 1967	1963 - 1967	1968	1967	MEDIAN 1963 - 1967
Aseptic meningitis	50	41	38	882	889	763
Brucellosis	14	8	6	92	133	133
Diphtheria	2	—	3	88	53	82
Encephalitis, primary:						
Arthropod-borne & unspecified	19	28	- - -	433	663	- - -
Encephalitis, post-infectious	12	18	- - -	276	467	- - -
Hepatitis, serum	97	38	598	2,049	1,022	20,805
Hepatitis, infectious	818	650		21,886	19,783	
Malaria	51	31	4	1,052	994	49
Measles (rubeola)	502	696	3,020	17,621	54,627	227,487
Meningococcal infections, total	42	25	39	1,659	1,405	1,599
Civilian	36	25	- - -	1,496	1,301	- - -
Military	6	—	- - -	163	104	- - -
Mumps	1,830	- - -	- - -	115,961	- - -	- - -
Poliomyelitis, total	3	—	5	22	11	26
Paralytic	3	—	3	22	9	24
Rubella (German measles)	886	898	- - -	39,876	36,870	- - -
Streptococcal sore throat & scarlet fever	5,353	5,018	4,791	256,869	276,993	251,397
Tetanus	5	5	7	69	91	115
Tularemia	6	8	7	92	79	117
Typhoid fever	10	11	7	144	194	183
Typhus, tick-borne (Rky. Mt. spotted fever)	5	11	11	80	91	82
Rabies in animals	74	63	70	1,850	2,294	2,294

TABLE II. NOTIFIABLE DISEASES OF LOW FREQUENCY

	Cum.		Cum.
Anthrax:	2	Rabies in man:	—
Botulism: Alaska–1	2	Rubella, Congenital Syndrome:	3
Leptospirosis:	13	Trichinosis: Calif.–1	36
Plague:	—	Typhus, murine: Tex.–3	9
Psittacosis: Tenn.–1	24		

FOLLOW-UP BOVINE CYSTICERCOSIS – *(Continued from front page)*

initially, and then placed on a carefully formulated mixture of corn silage, sorghum, protein supplement, and molasses. After the 4-to-5-month fattening period, the cattle are sent to slaughter.

From January 1 to March 15, of 1,398 cattle from Feedlot A that were sent to slaughter, only one was found infected with *Cysticercus bovis*. However, from March 15 to June 12, of 5,870 cattle, originating in Feedlot A, 743 were infected (overall infection rate 12.7 percent). Investigation into the sources for all cattle slaughtered since January 1, 1968, revealed that the cattle were assembled from a variety of sources by several commercial buyers. Some were from a buyer in Oklahoma. When these animals were shipped, 300 of the fatter cattle were put in pen no. 8, and the remaining cattle were kept on pasture. After 5 months on pasture, the remaining animals were put in pens 4, 30, 31, and 33. Another shipment from Mississippi was pastured and then placed in pen 34. In no instance was a common factor found for all the infected cattle prior to entering the feedlot, including grazing of cattle on sewage irrigated pastures.

At slaughter cattle from pens 4 and 8 were free of cysticercosis whereas cattle from pens 30, 31, 33, and 34 were highly infected. The infection rates among the cattle in the 34 pens at the feedlot varied from 0 to 67.6 percent. Pens 29, 30, 31, 33, and 34 had appreciably higher rates with rates of 14.4, 47.8, 67.6, 58.2, and 25.4 percent, respectively. These five pens were in a single line of six pens. Cattle in pen 32 entered the feedlot at a later date and therefore had not yet been slaughtered at the height of the epizootic. In the infected animals, cysts were found in the masseter muscles, esophagus, liver, heart, and diaphragm, and the majority of cysts were degenerated and caseous, indicating that the infections were probably several months old.

The personnel at the feedlot were investigated for *Taenia saginata*. In addition to the manager, seven employees worked at Feedlot A at the time of the inquiry. Two former employees, who worked at the feedlot between the time the cattle entered the feedlot and were slaughtered, were also questioned. None of the present employees gave a history suggestive of taeniasis *(T. saginata)*, but a former employee stated that 1 1/2 years ago he had passed motile, flat worms, approximately 2 cm long, in his stool. He had not been treated for his condition. All employees denied defecation in the feedlot area. It was noted, however, that the most likely area for defecation – the feed trench silo, located below eye level and on the fringe of the feedlot – was worked in by only a present employee and the former employee with a history of tapeworm infection. Stool and anal swab tests were performed on the present and former employees and were negative for *Taenia* eggs. Because of the former employee's history of tapeworm infection, he was later reexamined, and this specimen contained *Taenia* eggs in abundance.

Feedlot A had one toilet facility. The discharge drained into an earthen sludge pit, located about 6 feet from a submerged silage hopper also with an earthen bottom. The close proximity of this human excreta repository to a cattle feed hopper suggested the possibility of subterranean seepage of *Taenia* eggs as the source of this epizootic. Analysis of samples of sewage and samples from the cattle aisles and feed and water troughs, however, showed no evidence of *Taenia* eggs.

These data suggest that the animals acquired their infection in the feedlot and that since a majority of pens showed no infection, the source of infection was not common to the entire feedlot, i.e., water or molasses. The protein supplement and sorghum were not implicated because they were heated to 180°F., a temperature at which *Taenia* eggs can not survive. Infection, spread from a stool deposited directly on the ground, did not seem likely because of the widespread infection in separate but adjacent pens. It appears, however, that transmission occurred through a specifically contaminated, locally distributed, feed ingredient, i.e., hay or corn silage. Hay could not be implicated because cattle that remained free of infection had received hay from the same source and at the same time as cattle that later became infected. The other feed ingredient, corn silage, was removed daily from the trench silo for mixing with the other ingredients. It is significant that one truckload of silage was enough to feed four or five pens of animals and that five pens in a row of six pens exhibited high rates of infection. The probability that contaminated silage was the source of this epizootic is enhanced by the fact that the former employee who worked in the trench silo had *Taenia* eggs in his stool. The likelihood that he was the source of infection is also increased by temporal considerations. Since the cattle were not infected in pasture and since the majority of cysts were degenerated and caseous, the most likely time of infection would have been mid-October when the cattle first entered the feedlot. The former employee had started working in the feedlot at that time. It is significant also that pen 32 was empty at the time of this man's employment and that animals placed in the pen after the man left his employment remained free of infection.

Investigation near Hereford, Texas, at Feedlot B

Feedlot B is a commercial feedlot with a capacity for 15,000 cattle. Operations are similar to those at Feedlot A. Prior to March 17, no cysticercosis was reported in the 5,592 cattle sent to slaughter since January 1. In late March, however, 176 cattle from one pen were sent to slaughter, and 27 animals were infected. Since then of 6,590 cattle slaughtered, 170 were infected (infection rate 2.3 percent). At the time of investigation, cattle had been shipped from 49 of the 132 pens at Feedlot B, but because some of the pen groups had been intermixed at slaughter, the pens containing the infected animals could not be

specifically identified. However, it was estimated that 19 pens contained infected animals. The infected pens were scattered throughout the feedlot, and few infected pens bordered on other infected pens. The sources of the 176 cattle in the index pen were investigated, and it was found that the animals came from 21 different sources and were owned initially by at least 47 individuals. No common factor prior to entering the feedlot could be found.

There were 20 employees and a manager at Feedlot B. When the manager learned that his cattle were infected, he had a stool survey performed on his employees by a local laboratory. All stools were negative. In a second stool survey, however, one employee was found infected with *Taenia* eggs. This person was responsible for the daily cleaning of the water troughs, but he denied defecation in the feedlot area. Three employees left their employment rather than submit specimens for the first stool survey. One of these men had been seen on multiple occasions by his co-workers to defecate in the feedlot cattle driveways and pens. The opportunity for an employee to defecate in the feedlot is enhanced by the rolling terrain and the presence of a single toilet to serve the vast feedlot. Since the epizootic, the manager has installed chemical toilets in strategic locations.

The information obtained in this investigation suggests that because of the scattered nature of this infection, that pastures and a factor common to all animals, i.e., protein, hay, silage, and water, would not account for the epizootic. The most likely mode of spread appeared to be the ground. It was found that one of the laborers habitually defecated in the cattle driveways and pens; however, he could not be located for stool analysis. Another employee did have *Taenia* eggs in his stool, and although he denied defecating in the feedlot, the ability of *Taenia saginata* to force the anal sphincter and fall to the ground makes it possible for an individual to spread infection without directly defecating on the ground.

Investigation of Other Feedlots

Other feedlots in the northern part of Texas had shipped cattle to slaughter that were found infected with cysticercosis. Since the beginning of the year until April 15, 10 feedlots had shipped lots totaling 1,914 animals of which 19 were infected (infection rate 1 percent). The infections were of a sporadic, enzootic character rather than the epizootic seen at Feedlots A and B, and the cause of these isolated cases remains obscure.

(Reported by Dr. J. E. Peavy, Commissioner of Health, Dr. A. B. Rich, Chief, Veterinary Public Health Division, and Dr. M. S. Dickerson, State Epidemiologist, Texas State Department of Health; Dr. George Martin, Livestock Slaughter Inspection Division, Consumer and Market Service, and Dr. Erston Cox, Veterinarian in Charge, Animal Health Division, Agriculture Research Service, USDA; and a team from NCDC.)

CAT-ASSOCIATED TULAREMIA – Georgia

On April 19, 1968, a 39-year-old woman, residing in northwestern Georgia, was severely bitten and clawed on her left hand by her cat. On April 24, she noted chills and a fever of 104°F., and the following day she developed painful left axillary lymphadenopathy. She was admitted to the hospital on April 26 at which time a large draining purulent wound was observed on her left thumb, and coexisting pneumonitis was diagnosed. The patient was treated with penicillin, erythromycin, and tetracycline, and gradually improved over the next 4 weeks.

Agglutination titers against *Francisella tularensis* rose from less than 1:8 on April 27 to 1:320 on May 28. Sera collected on May 17 and May 28 were non-reactive when tested against Psittacosis-Lymphogranuloma Venereum antigen, and skin tests performed on June 7 using cat-scratch fever antigen were also negative.

The patient gave no history of tick bites. The cat may have acquired the infection from ticks or by feeding on a tularemia-diseased carcass; however, it remained well.

(Reported by David W. Dreesen, D.V.M., Veterinary Epidemiologist, and John E. McCroan, Ph.D., Director, Branch of Epidemiologic Investigation, Georgia Department of Public Health; and S. S. Kalter, Ph.D., Southwest Foundation for Research and Education, San Antonio, Texas.)

CURRENT TRENDS
MEASLES – United States

All nine geographic divisions showed a decrease in the number of counties or health districts reporting measles during the 4-week period, May 19 through June 15, 1968, from those reporting in the comparable 4-week period in 1967 (Table 1). However, the New England division had more than a twofold increase in the number of counties reporting a total of 10 or more cases in this 4-week period in 1968 over the number reporting a similar number of cases in the corresponding 4-week period in 1967.

From May 19 through June 15, 1968, (weeks 21-24), measles was reported from 316 counties or health districts, whereas 592 counties or health districts reported measles during the comparable 4-week period in 1967. Of these 316 areas, 58 (18 percent) reported a total of 10 or more cases (Figure 1) as contrasted with 153 of 592 (26 percent) reporting a similar number of cases during the corresponding 4-week period in 1967 (Figure 2).

(Reported by State Services Section, and Statistics Section, Epidemiology Program, NCDC.)

Table 1
Number of Counties or Health Districts Reporting Measles During Weeks 21-24, 1967 and 1968, by Geographic Divisions

Geographic Division	Number of Counties or Health Districts Reporting			
	1 or More Cases		Total of 10 or More Cases	
	1968 May 19-June 15	1967 May 21-June 17	1968 May 19-June 15	1967 May 21-June 17
United States	316	592	58	153
New England	18	23	8	3
Middle Atlantic	45	55	11	12
East North Central	54	82	8	17
West North Central	13	48	–	14
South Atlantic	37	90	3	16
East South Central	16	61	1	11
West South Central	59	96	15	30
Mountain	28	58	5	12
Pacific	46	79	7	38
Puerto Rico	5	5	–	4
Virgin Islands	1	1	–	–

Figure 1
COUNTIES OR HEALTH DISTRICTS REPORTING A TOTAL OF 10 OR MORE CASES OF MEASLES
MAY 19 – JUNE 15, 1968
UNITED STATES, PUERTO RICO, AND VIRGIN ISLANDS

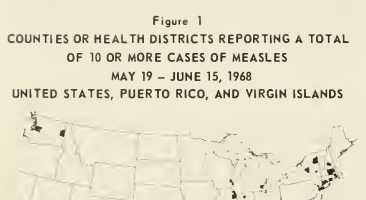
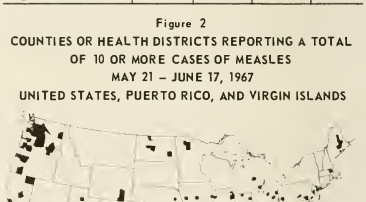


Figure 2
COUNTIES OR HEALTH DISTRICTS REPORTING A TOTAL OF 10 OR MORE CASES OF MEASLES
MAY 21 – JUNE 17, 1967
UNITED STATES, PUERTO RICO, AND VIRGIN ISLANDS



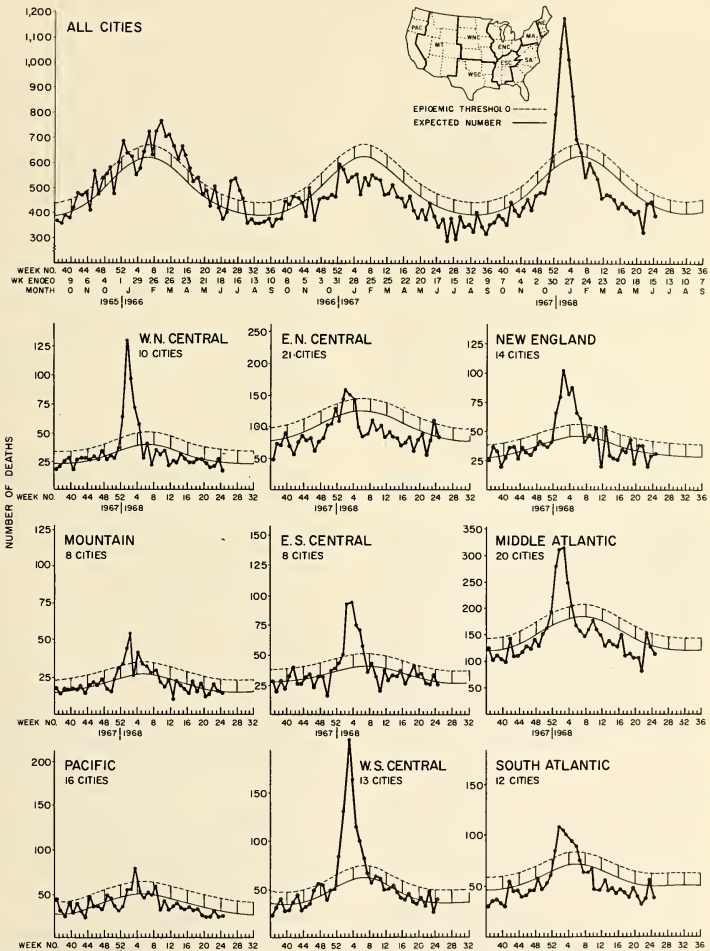
PNEUMONIA-INFLUENZA DEATHS – United States

A sharp increase in pneumonia-influenza deaths occurred in the United States during the 1967-68 influenza season (Figure 3). Of the nine geographic divisions of the United States, all but the Pacific division demonstrated excess mortality during this period. For the country as a whole, excess pneumonia-influenza mortality was observed during the first 6 weeks of 1968.

Since the eighth week of 1968, pneumonia-influenza mortality has tended to be at levels below the expected in the East North Central, Middle Atlantic, and South Atlantic divisions. This phenomenon has been observed as well for the country as a whole.

(Reported by Respiratory Viral Diseases Unit, Viral Diseases Section, and Statistics Section, Epidemiology Program, NCDC.)

Figure 3
PNEUMONIA-INFLUENZA DEATHS IN 122 UNITED STATES CITIES



RECOMMENDATION OF THE PUBLIC HEALTH SERVICE ADVISORY COMMITTEE ON IMMUNIZATION PRACTICES

In May 1968 the Public Health Service Advisory Committee on Immunization Practices completed the following recommendations on influenza immunization in the civilian population.

INFLUENZA VACCINES – 1968-69

RATIONALE FOR SELECTIVE USE OF INFLUENZA VACCINE

Prevention of influenza in the general population through routine vaccination, although perhaps a goal for the future, is not presently possible. Two of the limiting factors are that influenza occurs at intervals and in patterns which are only broadly predictable and that influenza vaccines are not yet completely adaptable to regular, widespread use. There continues to be a sound basis, however, for recommending **selective** use of influenza vaccine. The rationale for selective use is based on characteristics of the disease, its epidemiology and virology, and the efficacy of vaccines.

Influenza is a generally mild epidemic illness which appears periodically. Its pattern of recurrences provides a basis for yearly forecasts: type A epidemics occur at 2-3 year intervals, and type B epidemics, at 3-6 year intervals. Periodicity is thought to result from antigenic variations in the prevalent influenza viruses and shifts in the balance of susceptibles and immunes in the population. The relative accuracy of influenza forecasts depends on the extent of recent epidemics and the antigenic changes in influenza viruses.

Although our best available preventives of influenza, inactivated vaccines are among the least satisfactory immunizing agents in general use today. They have often been marginally effective, offering rather brief periods of protection. They also produce local and systemic reactions with relatively high frequency. Public health recommendations in recent years have acknowledged these limitations and have encouraged only selective influenza vaccination.

Older and chronically ill individuals in the population are essentially the only ones who have any risk of serious complications or fatality from influenza. Therefore, annual influenza vaccination has been recommended for them while not being recommended for the entire population.

When epidemic influenza is forecast, vaccination programs might reasonably be extended beyond the high risk groups to those providing essential community services. Otherwise, large-scale vaccination programs are not now warranted and should not take precedence over public health activities of already established importance.

The following prospectus for influenza in 1968-69 includes a description of vaccines which will be available and general recommendations for limited influenza vaccination.

INFLUENZA PROSPECTUS – 1968-69 – UNITED STATES

During the late fall and winter of 1967-68, all but four States – Oregon, California, Idaho, and Nevada – reported outbreaks of influenza-like illness. A sharp increase in pneumonia-influenza deaths occurred coincidentally in eight of the nine geographic divisions of the United States – the Pacific Division was the only exception.

Forty States confirmed influenza A2 by laboratory procedures. Viral strains recovered during 1967-68 remain in the general family of type A2 viruses identified worldwide since 1957, but show a moderate antigenic shift from strains isolated in recent years.

No outbreaks of type B influenza were reported in the United States in 1967-68. The country last experienced type B influenza epidemics in 1965-66 (East) and 1966-67 (West). Strains of type B virus recovered in other areas of the world over the past year are antigenically similar to those identified in the United States in 1965-67.

In view of influenza's periodicity, little or no A2 influenza is expected to occur in the United States during the 1968-69 season, except possibly on the Pacific Coast. Scattered type B influenza may be seen, but its total extent should be minimal.

INFLUENZA VIRUSES AND VACCINES

Formulation of current influenza vaccines is reviewed annually by the Division of Biologics Standards, National Institutes of Health, and changes are made when significant shifts have occurred in the antigenic characteristics of prevalent viruses. This regular review is essential, since vaccine effectiveness depends primarily on the antigenicity of component viruses and on how similar they are to viruses occurring in the community.

Optimally constituted influenza vaccines have achieved 60 percent or greater protection against the same or closely related viral strains. However, vaccines in general civilian use often have not appeared to achieve this degree of protection.

Another important factor in vaccine effectiveness is the amount of antigen administered. In an attempt to minimize the frequency of local and systemic reactions associated with influenza vaccines, the Division of Biologics Standards established a limit of 600 chick cell agglutinating (CCA) units of antigen per adult dose of vaccine for civilian use.

Limited quantities of a new, highly purified vaccine of bivalent formulation also with 600 CCA units, were used in 1967-68. This vaccine, which contains substantially less non-viral material than the regular vaccines, caused fewer severe reactions.

INFLUENZA SURVEILLANCE

It should be emphasized that decisions on formulations of influenza vaccines and recommendations for their

use rely on prompt reporting of epidemiologic and laboratory data collected during each influenza season from as many sources as possible.

INFLUENZA VACCINES – 1968-69

As in the 1967-68 influenza season, both bivalent and polyvalent vaccines will be available. Each vaccine contains 600 CCA units, but the bivalent vaccine contains a higher proportion of contemporary strains. Polyvalent vaccine incorporated older strains (types A and A1), hence less of the recent A2 and B antigens. The older strains have not been shown to play a significant role in protecting against currently prevalent viruses; therefore, the bivalent product should provide greater protection.

Compositions of the 1968-69 vaccines are shown below:

Type	Strain	CCA Units Per Adult Dose			
		Bivalent		Polyvalent	
A	PR/8/34	–		100	
A1	Ann Arbor/1/57	–		100	
A2	Japan/170/62	150	300	100	200
	Taiwan/1/64	150		100	
B	Mass/3/66	300		200	
	Total	600		600	

RECOMMENDATIONS FOR VACCINE USE

Until consistently high level and durable protection can be expected from influenza vaccines and until their capacity for producing reactions is reduced, routine vaccination of healthy groups of adults and children is not recommended. This recommendation is particularly relevant in 1968-69, because epidemic influenza is not expected to occur.

Annual influenza immunization is again recommended for individuals in groups known to experience high mortality from epidemic influenza. In particular, immunization with bivalent vaccine is recommended for persons in older age groups and for all individuals with chronic illnesses, as defined below.

Chronically Ill: Persons of all ages who suffer from chronic debilitating diseases, including cardiovascular, pulmonary, renal, or metabolic disorders: 1) patients with rheumatic heart disease, especially with mitral stenosis; 2) patients with such cardiovascular disorders as arteriosclerotic heart disease and hypertension, especially showing evidence of frank or incipient cardiac insufficiency; 3) patients with chronic bronchopulmonary diseases such as asthma, chronic bronchitis, cystic fibrosis, bronchiectasis, pulmonary fibrosis, pulmonary emphysema, or pulmonary tuberculosis; and 4) patients with diabetes mellitus and Addison's disease.

Older Age Groups: During major influenza outbreaks, especially those caused by type A viruses, increased mortality has regularly been recognized for persons over 45 years of age and even more notably for those over 65. This association has been particularly marked in individuals with underlying chronic disease.

Vaccination Schedule

All injections should be given subcutaneously.

Persons Vaccinated After July 1963:* Only a single booster of bivalent vaccine at the dosage level specified below is necessary for individuals for whom immunization is indicated and who have been vaccinated as recently as July 1963. This booster dose is best given in early December, which is approximately one month before the beginning of the usual influenza season.

Persons Not Vaccinated Since July 1963:* Persons for whom immunization is indicated and who have not been vaccinated since July 1963 should receive a primary immunization series of bivalent vaccine. The optimal primary series consists of two doses 2 months apart. Even a single dose will afford some protection, and a second injection as early as 2 weeks after the first will enhance the antibody response. Immunizations should be scheduled to be completed by early December.

Vaccine Dose**

Adults and Children Over 10 Years Old: 1.0 ml. on one or two occasions as specified above.

Children 6 to 10 Years Old: 0.5 ml. on one or two occasions as specified above.***

Children 3 Months to 6 Years Old: 0.1-0.2 ml. of vaccine on two occasions 1-2 weeks apart, followed by a third dose of 0.1-0.2 ml. about two months later.***

Reactions

Reactions to regular influenza vaccines are thought to be related primarily to the non-viral components of the vaccine and commonly include erythema, induration, and tenderness at the site of injection. Systemic reactions of fever, headache, and malaise also occur, but less frequently.

For older individuals who should receive influenza vaccine but have experienced severe local and systemic reactions following receipt of regular vaccines, full doses of a highly purified influenza vaccine should be considered. Intracutaneous administration of regular vaccines had previously been used in these older age individuals but is less effective than full doses of vaccine given by the subcutaneous route.

Contraindications

Since the vaccine viruses are propagated in eggs, the vaccine should not be administered to anyone who is hypersensitive to eggs.

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*This date represents the last major change in the A2 component.

**The equivalent dose volume of highly purified vaccine is indicated by the manufacturer.

***Since febrile reactions in this age group are common following influenza vaccination, an antipyretic may be indicated.

TABLE III. CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES

FOR WEEKS ENDED

JUNE 29, 1968 AND JULY 1, 1967 (26th WEEK)

AREA	ASEPTIC MENINGITIS		BRUCELLOSIS	DIPHTHERIA	ENCEPHALITIS			HEPATITIS			MALARIA
					Primary including unsp. cases		Post-Infectious	Serum	Infectious		
	1968	1967	1968	1968	1968	1967	1968	1968	1968	1967	1968
UNITED STATES...	50	41	14	2	19	28	12	97	818	650	51
NEW ENGLAND.....	3	-	-	-	-	-	1	1	21	31	1
Maine.*.....	-	-	-	-	-	-	-	-	1	3	-
New Hampshire.....	-	-	-	-	-	-	-	-	-	1	-
Vermont.....	-	-	-	-	-	-	-	-	-	1	-
Massachusetts.....	2	-	-	-	-	-	1	-	13	8	-
Rhode Island.....	-	-	-	-	-	-	-	1	1	9	-
Connecticut.....	1	-	-	-	-	-	-	-	6	9	1
MIDDLE ATLANTIC.....	4	7	1	-	3	4	2	34	147	100	3
New York City.....	4	2	-	-	1	1	-	22	43	21	-
New York, up-State.	-	1	-	-	-	-	1	-	23	37	2
New Jersey.....	-	1	-	-	-	3	-	12	43	14	1
Pennsylvania.....	-	3	1	-	2	-	1	-	38	28	-
EAST NORTH CENTRAL...	4	9	-	-	2	9	-	6	100	83	4
Ohio.....	-	1	-	-	2	6	-	1	31	20	-
Indiana.....	2	2	-	-	-	1	-	-	12	6	1
Illinois.....	1	1	-	-	-	-	-	-	-	21	1
Michigan.....	1	5	-	-	-	1	-	5	45	30	2
Wisconsin.....	-	-	-	-	-	1	-	-	12	6	-
WEST NORTH CENTRAL...	1	1	-	-	2	1	2	1	83	54	10
Minnesota.....	1	1	-	-	-	-	2	1	13	9	5
Iowa.....	-	-	-	-	-	-	-	-	5	2	1
Missouri.....	-	-	-	-	1	-	-	-	20	39	1
North Dakota.....	-	-	-	-	-	-	-	-	4	-	-
South Dakota	-	-	-	-	-	-	-	-	3	-	-
Nebraska.....	-	-	-	-	-	-	-	-	2	1	-
Kansas.....	-	-	-	-	1	1	-	-	36	3	3
SOUTH ATLANTIC.....	7	-	7	-	1	3	1	2	50	53	8
Delaware.....	1	-	-	-	-	-	-	-	6	1	1
Maryland.....	3	-	-	-	-	2	-	1	11	17	-
Dist. of Columbia..	-	-	-	-	-	-	-	-	4	-	-
Virginia.....	-	-	7	-	1	-	-	-	5	9	-
West Virginia.....	-	-	-	-	-	-	-	-	1	2	1
North Carolina.....	-	-	-	-	-	-	-	-	5	8	4
South Carolina.....	-	-	-	-	-	-	-	-	1	-	-
Georgia.....	-	-	-	-	-	-	-	-	2	10	1
Florida.....	3	-	-	-	-	1	1	1	15	6	1
EAST SOUTH CENTRAL...	3	4	1	-	-	-	1	-	26	48	6
Kentucky.....	1	1	-	-	-	-	-	-	4	14	6
Tennessee.....	1	1	1	-	-	-	1	-	9	19	-
Alabama.....	-	1	-	-	-	-	-	-	6	2	-
Mississippi.....	1	1	-	-	-	-	-	-	7	13	-
WEST SOUTH CENTRAL...	13	8	1	2	5	3	1	1	88	67	-
Arkansas.....	-	-	-	-	-	-	-	-	8	-	-
Louisiana.....	10	2	1	-	5	2	1	1	16	11	-
Oklahoma...*.....	1	2	-	-	-	-	-	-	21	1	-
Texas.....	2	4	-	2	-	1	-	-	43	55	-
MOUNTAIN.....	1	-	1	-	-	4	-	6	49	26	5
Montana.....	-	-	-	-	-	-	-	-	3	3	-
Idaho.....	-	-	-	-	-	-	-	-	2	2	1
Wyoming.....	-	-	-	-	-	-	-	-	2	-	-
Colorado.....	1	-	-	-	-	4	-	5	29	10	4
New Mexico.....	-	-	1	-	-	-	-	-	4	3	-
Arizona.....	-	-	-	-	-	-	-	1	4	8	-
Utah.....	-	-	-	-	-	-	-	-	5	-	-
Nevada.....	-	-	-	-	-	-	-	-	-	-	-
PACIFIC.....	14	12	3	-	6	4	4	46	254	188	14
Washington.....	-	3	-	-	-	-	-	-	30	25	1
Oregon.....	-	1	-	-	-	-	-	-	16	11	-
California.....	11	7	3	-	3	4	4	46	202	152	4
Alaska.....	-	-	-	-	1	-	-	-	3	-	-
Hawaii.....	3	1	-	-	2	-	-	-	3	-	9
Puerto Rico.....	-	-	-	-	-	-	-	-	50	25	-

*Delayed reports: Aseptic meningitis: Okla. 3 cases 1967
Encephalitis, primary: Okla. 1 case 1967, 2 cases 1968
Encephalitis, post-infectious: Okla. 1
Hepatitis, infectious: Me. 2

TABLE III. CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES

FOR WEEKS ENDED

JUNE 29, 1968 AND JULY 1, 1967 (26th WEEK) - CONTINUED

AREA	MEASLES (Rubeola)			MENINGOCOCCAL INFECTIONS, TOTAL			MUMPS	POLIOMYELITIS			RUBELLA
		Cumulative			Cumulative			Total	Paralytic		
	1968	1968	1967	1968	1968	1967	1968	1968	1968	Cum. 1968	1968
UNITED STATES...	502	17,621	54,627	42	1,659	1,405	1,830	3	3	22	886
NEW ENGLAND.....	49	1,037	760	1	87	57	335	-	-	-	255
Maine..*.....	1	35	228	-	6	3	9	-	-	-	9
New Hampshire.....	-	113	72	-	7	2	-	-	-	-	-
Vermont.....	-	1	29	-	1	-	5	-	-	-	2
Massachusetts..*...	19	333	290	-	37	29	198	-	-	-	107
Rhode Island.....	-	1	60	-	7	4	51	-	-	-	70
Connecticut.....	29	554	81	1	29	19	72	-	-	-	67
MIDDLE ATLANTIC.....	185	3,288	2,039	7	286	219	165	-	-	-	170
New York City.....	106	1,484	387	4	61	36	128	-	-	-	98
New York, Up-State.	44	1,117	461	2	46	53	NN	-	-	-	55
New Jersey.....	28	536	467	-	102	81	37	-	-	-	17
Pennsylvania.....	7	151	724	1	77	49	NN	-	-	-	-
EAST NORTH CENTRAL...	42	3,483	4,934	10	198	179	551	1	1	1	159
Ohio.....	6	276	1,106	1	52	63	67	-	-	-	31
Indiana.....	7	608	564	2	28	21	32	-	-	-	3
Illinois.....	9	1,295	854	4	43	43	72	1	1	1	60
Michigan.....	5	233	864	2	58	39	118	-	-	-	31
Wisconsin.....	15	1,071	1,546	1	17	13	262	-	-	-	34
WEST NORTH CENTRAL...	8	353	2,724	3	86	63	60	-	-	-	9
Minnesota.....	-	15	126	-	19	15	1	-	-	-	-
Iowa..*.....	3	89	730	1	6	12	54	-	-	-	5
Missouri.....	-	80	325	1	31	12	4	-	-	-	3
North Dakota.....	5	122	790	-	3	1	-	-	-	-	1
South Dakota.....	-	4	51	-	4	6	NN	-	-	-	-
Nebraska.....	-	35	610	-	6	11	-	-	-	-	-
Kansas.....	-	8	92	1	17	6	1	-	-	-	-
SOUTH ATLANTIC.....	65	1,321	6,452	4	342	270	130	-	-	-	62
Delaware.....	1	13	42	1	6	5	6	-	-	-	3
Maryland.....	-	79	136	1	24	33	3	-	-	-	4
Dist. of Columbia..	-	6	21	-	13	10	8	-	-	-	-
Virginia.....	22	283	1,996	-	27	29	52	-	-	-	11
West Virginia.....	24	234	1,312	-	8	20	33	-	-	-	24
North Carolina.....	6	279	834	1	68	55	NN	-	-	-	-
South Carolina.....	-	12	486	1	55	24	2	-	-	-	4
Georgia.....	-	4	29	-	60	43	-	-	-	-	-
Florida.....	12	411	1,596	-	81	51	26	-	-	-	16
EAST SOUTH CENTRAL...	23	521	4,903	5	144	117	103	-	-	-	56
Kentucky.....	2	167	1,276	5	56	34	13	-	-	-	28
Tennessee.....	-	54	1,694	-	48	47	79	-	-	-	22
Alabama.....	3	74	1,283	-	20	24	7	-	-	-	6
Mississippi.....	18	226	650	-	20	12	4	-	-	-	-
WEST SOUTH CENTRAL...	75	4,398	16,679	8	274	199	151	2	2	13	60
Arkansas.....	-	2	1,400	-	15	25	2	-	-	-	-
Louisiana.....	-	2	146	5	77	80	3	-	-	-	1
Oklahoma..*.....	2	108	3,312	-	48	13	1	-	-	-	-
Texas.....	73	4,286	11,821	3	134	81	145	2	2	13	59
MOUNTAIN.....	15	910	4,342	1	25	25	92	-	-	-	41
Montana.....	-	66	275	-	2	-	13	-	-	-	3
Idaho.....	1	17	361	1	11	1	12	-	-	-	4
Wyoming.....	-	49	177	-	-	1	-	-	-	-	-
Colorado.....	11	469	1,436	-	7	10	17	-	-	-	15
New Mexico.....	1	82	562	-	-	3	13	-	-	-	2
Arizona.....	2	201	935	-	1	4	30	-	-	-	13
Utah.....	-	21	327	-	1	4	7	-	-	-	4
Nevada.....	-	5	269	-	3	2	-	-	-	-	-
PACIFIC.....	40	2,310	11,794	3	217	276	243	-	-	8	74
Washington.....	1	513	5,366	-	36	24	17	-	-	-	3
Oregon.....	12	444	1,488	1	17	24	19	-	-	-	16
California.....	26	1,317	4,681	2	152	216	179	-	-	8	48
Alaska.....	1	2	125	-	1	9	16	-	-	-	5
Hawaii.....	-	34	134	-	11	3	12	-	-	-	2
Puerto Rico.....	3	334	1,957	-	18	9	23	-	-	-	-

* Delayed reports: Measles: Me. 4, Mass. delete 1, Okla. delete 3
Mumps: Me. 18, Iowa 39
Rubella: Me. 17, Okla. 3

TABLE III. CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES
FOR WEEKS ENDED
JUNE 29, 1968 AND JULY 1, 1967 (26th WEEK) - CONTINUED

AREA	STREPTOCOCCAL SORE THROAT & SCARLET FEVER	TETANUS		TULAREMIA		TYPHOID		TYPHUS FEVER TICK-BORNE (Rky. Mt. Spotted)		RABIES IN ANIMALS	
	1968	1968	Cum. 1968	1968	Cum. 1968	1968	Cum. 1968	1968	Cum. 1968	1968	Cum. 1968
UNITED STATES...	5,353	5	69	6	92	10	144	5	80	74	1,850
NEW ENGLAND.....	804	-	1	-	40	-	4	-	-	1	62
Maine.*	8	-	-	-	-	-	-	-	-	-	50
New Hampshire.*	24	-	-	-	-	-	-	-	-	-	2
Vermont.....	15	-	-	-	40	-	-	-	-	1	8
Massachusetts.....	104	-	-	-	-	-	2	-	-	-	1
Rhode Island.....	83	-	-	-	-	-	-	-	-	-	-
Connecticut.....	570	-	1	-	-	-	2	-	-	-	1
MIDDLE ATLANTIC.....	388	1	10	-	3	-	12	1	6	2	17
New York City.....	12	-	5	-	-	-	7	-	-	-	-
New York, Up-State.	370	-	4	-	3	-	2	-	1	-	11
New Jersey.....	NN	-	-	-	-	-	-	1	1	-	-
Pennsylvania.....	6	1	1	-	-	-	3	-	4	2	6
EAST NORTH CENTRAL...	435	-	8	1	7	2	23	-	3	3	163
Ohio.....	34	-	-	-	1	-	11	-	2	-	65
Indiana.....	74	-	1	1	1	2	3	-	-	2	59
Illinois.....	98	-	5	-	4	-	8	-	1	-	17
Michigan.....	127	-	2	-	1	-	-	-	-	-	9
Wisconsin.....	102	-	-	-	-	-	1	-	-	1	13
WEST NORTH CENTRAL...	164	-	2	1	7	1	8	-	2	15	415
Minnesota.....	14	-	-	-	-	-	-	-	-	5	116
Iowa.....	68	-	-	-	-	-	1	-	-	4	78
Missouri.....	26	-	2	1	5	-	3	-	-	3	75
North Dakota.....	35	-	-	-	-	-	-	-	-	1	68
South Dakota.....	16	-	-	-	1	-	1	-	1	-	34
Nebraska.....	2	-	-	-	-	1	3	-	1	1	21
Kansas.....	3	-	-	-	1	-	-	-	-	1	23
SOUTH ATLANTIC.....	653	-	12	-	5	1	37	2	47	6	209
Delaware.....	8	-	-	-	-	-	-	-	-	-	-
Maryland.....	165	-	1	-	-	1	7	1	5	-	3
Dist. of Columbia..	24	-	1	-	-	-	1	-	-	-	-
Virginia.....	202	-	2	-	1	-	7	1	21	2	85
West Virginia.....	106	-	1	-	-	-	-	-	-	1	27
North Carolina.....	2	-	2	-	2	-	2	-	14	-	8
South Carolina.....	9	-	1	-	-	-	-	-	1	-	-
Georgia.....	5	-	-	-	1	-	9	-	4	3	31
Florida.....	132	-	4	-	1	-	11	-	2	-	55
EAST SOUTH CENTRAL...	925	-	9	-	6	1	16	1	9	12	449
Kentucky.....	178	-	1	-	1	1	3	-	1	8	214
Tennessee.....	640	-	2	-	4	-	10	1	6	3	215
Alabama.....	45	-	3	-	-	-	-	-	1	-	19
Mississippi.....	62	-	3	-	1	-	3	-	1	1	1
WEST SOUTH CENTRAL...	400	3	14	3	18	2	12	-	10	18	345
Arkansas.....	17	-	4	1	2	-	1	-	-	2	40
Louisiana.....	1	-	5	-	3	1	2	-	-	-	31
Oklahoma.....	15	-	-	-	3	1	3	-	4	3	104
Texas.....	367	3	5	2	10	-	6	-	6	13	170
MOUNTAIN.....	876	-	-	1	5	-	9	1	2	3	42
Montana.....	19	-	-	-	-	-	-	-	-	-	-
Idaho.....	113	-	-	-	-	-	-	-	-	-	-
Wyoming.....	7	-	-	-	1	-	1	-	-	-	2
Colorado.....	502	-	-	1	2	-	2	1	2	-	1
New Mexico.....	135	-	-	-	-	-	6	-	-	1	19
Arizona.....	57	-	-	-	-	-	-	-	-	2	20
Utah.....	43	-	-	-	2	-	-	-	-	-	-
Nevada.....	-	-	-	-	-	-	-	-	-	-	-
PACIFIC.....	708	1	13	-	1	3	23	-	1	14	148
Washington.....	68	1	1	-	-	-	-	-	-	-	-
Oregon.....	50	-	1	-	1	-	3	-	-	-	3
California.....	446	-	11	-	-	3	20	-	1	14	145
Alaska.....	47	-	-	-	-	-	-	-	-	-	-
Hawaii.....	97	-	-	-	-	-	-	-	-	-	-
Puerto Rico.....	7	-	5	-	-	-	1	-	-	-	16

*Delayed reports: SST: Me. 30, N. H. 7

Week No. 26

TABLE IV. DEATHS IN 122 UNITED STATES CITIES FOR WEEK ENDED JUNE 29, 1968

(By place of occurrence and week of filing certificate. Excludes fetal deaths)

Area	All Causes		Pneumonia and Influenza All Ages	Under 1 year All Causes
	All Ages	65 years and over		
NEW ENGLAND:	663	404	44	43
Boston, Mass.	197	120	13	12
Bridgeport, Conn.	39	24	3	5
Cambridge, Mass.	25	17	5	1
Fall River, Mass.	29	21	2	1
Hartford, Conn.	42	22	1	1
Lowell, Mass.	19	11	1	-
Lynn, Mass.	29	22	1	2
New Bedford, Mass.	31	22	1	1
New Haven, Conn.	60	31	-	14
Providence, R. I.	61	32	2	3
Somerville, Mass.	15	13	4	-
Springfield, Mass.	46	29	3	1
Waterbury, Conn.	29	17	2	1
Worcester, Mass.	41	23	6	1
MIDDLE ATLANTIC:	3,162	1,837	118	133
Albany, N. Y.	48	28	1	3
Allentown, Pa.	36	25	2	-
Buffalo, N. Y.	140	83	1	7
Camden, N. J.	48	25	4	3
Elizabeth, N. J.	41	23	-	1
Erie, Pa.	30	17	1	1
Jersey City, N. J.	60	36	4	1
Newark, N. J.	94	52	10	4
New York City, N. Y.	1,502	858	58	58
Paterson, N. J.	45	25	1	1
Philadelphia, Pa.	561	321	17	29
Pittsburgh, Pa.	192	107	5	6
Reading, Pa.	40	30	1	2
Rochester, N. Y.	90	63	2	8
Schenectady, N. Y.	23	10	-	1
Scranton, Pa.	35	25	1	1
Syracuse, N. Y.	65	43	2	3
Trenton, N. J.	48	24	4	2
Utica, N. Y.	31	21	3	-
Yonkers, N. Y.	33	21	1	2
EAST NORTH CENTRAL:	2,595	1,452	90	154
Akron, Ohio	52	25	-	7
Canton, Ohio	40	21	2	2
Chicago, Ill.	715	381	19	43
Cincinnati, Ohio	190	116	8	11
Cleveland, Ohio	219	104	3	21
Columbus, Ohio	121	69	4	4
Dayton, Ohio	66	34	3	7
Detroit, Mich.	328	170	7	19
Evansville, Ind.	39	23	2	2
Flint, Mich.	44	24	4	1
Fort Wayne, Ind.	56	29	5	4
Gary, Ind.	28	14	1	-
Grand Rapids, Mich.	32	21	3	1
Indianapolis, Ind.	175	97	7	12
Madison, Wis.	38	24	3	3
Milwaukee, Wis.	124	87	2	3
Peoria, Ill.	49	31	3	3
Rockford, Ill.	35	19	7	3
South Bend, Ind.	56	37	3	1
Toledo, Ohio	124	86	3	3
Youngstown, Ohio	64	40	1	4
WEST NORTH CENTRAL:	755	440	17	35
Des Moines, Iowa	64	40	1	-
Duluth, Minn.	8	4	4	-
Kansas City, Kans.	32	17	2	1
Kansas City, Mo.	123	70	3	7
Lincoln, Nebr.	30	15	-	1
Minneapolis, Minn.	114	76	3	4
Omaha, Nebr.	68	34	-	3
St. Louis, Mo.	204	118	3	11
St. Paul, Minn.	54	31	-	3
Wichita, Kans.	58	35	1	5
SOUTH ATLANTIC:	1,132	576	38	49
Atlanta, Ga.	129	60	-	6
Baltimore, Md.	224	111	8	10
Charlotte, N. C.	46	19	3	7
Jacksonville, Fla.	51	32	1	3
Miami, Fla.	124	60	-	4
Norfolk, Va.	63	34	5	1
Richmond, Va.	81	43	5	5
Savannah, Ga.	45	19	3	-
St. Petersburg, Fla.	65	55	5	-
Tampa, Fla.	61	32	4	1
Washington, D. C.	213	95	4	10
Wilmington, Del.	30	16	-	2
EAST SOUTH CENTRAL:	578	305	22	22
Birmingham, Ala.	82	48	1	1
Chattanooga, Tenn.	59	26	2	5
Knoxville, Tenn.	44	29	2	-
Louisville, Ky.	109	58	10	4
Memphis, Tenn.	140	73	2	6
Mobile, Ala.	38	19	1	2
Montgomery, Ala.	26	14	1	1
Nashville, Tenn.	80	38	3	3
WEST SOUTH CENTRAL:	1,172	580	25	84
Austin, Tex.	35	21	3	3
Baton Rouge, La.	44	25	-	9
Corpus Christi, Tex.	24	15	-	-
Dallas, Tex.	162	82	2	11
El Paso, Tex.	45	23	2	3
Fort Worth, Tex.	99	48	-	7
Houston, Tex.	210	97	4	16
Little Rock, Ark.	57	31	2	5
New Orleans, La.	155	60	2	14
Oklahoma City, Okla.	85	36	-	1
San Antonio, Tex.	122	66	-	4
Shreveport, La.	65	37	3	6
Tulsa, Okla.	69	39	5	5
MOUNTAIN:	470	269	14	23
Albuquerque, N. Mex.	58	21	3	1
Colorado Springs, Colo.	27	15	-	2
Denver, Colo.	123	72	2	3
Ogden, Utah	24	15	3	2
Phoenix, Ariz.	108	62	1	4
Pueblo, Colo.	33	19	2	2
Salt Lake City, Utah	68	32	-	5
Tucson, Ariz.	49	33	1	4
PACIFIC:	1,410	885	35	59
Berkeley, Calif.	16	14	-	-
Fresno, Calif.	51	29	-	6
Glendale, Calif.	33	22	1	-
Honolulu, Hawaii	52	31	1	3
Long Beach, Calif.	87	58	2	3
Los Angeles, Calif.	387	246	8	12
Oakland, Calif.	62	42	2	3
Pasadena, Calif.	32	21	1	1
Portland, Oreg.	110	65	3	6
Sacramento, Calif.	70	46	1	4
San Diego, Calif.	99	51	4	5
San Francisco, Calif.	157	94	2	3
San Jose, Calif.	44	28	1	1
Seattle, Wash.	131	77	6	6
Spokane, Wash.	42	33	1	-
Tacoma, Wash.	37	28	2	2
Total	11,937	6,748	403	602

Cumulative Totals
including reported corrections for previous weeks

All Causes, All Ages	340,201
All Causes, Age 65 and over	198,171
Pneumonia and Influenza, All Ages	14,804
All Causes, Under 1 Year of Age	15,577

INTERNATIONAL NOTES
QUARANTINE MEASURES

Additional Immunization Information for International Travel, 1967-68 edition, Public Health Service Publication No. 384

AFRICA

Equatorial Guinea – Page 28

Insert the following yellow fever information: Yellow fever vaccination is required of arrivals from infected areas.

EUROPE

The Netherlands – Page 70

Delete the previous note concerning smallpox. Insert: smallpox vaccination is required of all arrivals except arrivals from Azores and Madeira Islands, Canary Islands, Reunion, Bermudas, Canada, French Guiana, Greenland, Guadeloupe, Martinique, Netherlands Antilles, St. Pierre, and Miquelon, Surinam, and United States of America.

OCEANIA

Nauru Islands – Page 78

Delete the previous information. Insert the following: Smallpox – Smallpox vaccination is required of all arrivals except arrivals by sea from the following countries and territories provided that travelers have not been outside these areas for 14 days before arrival and that these areas are free of smallpox: Australia, British Solomon Islands, Christmas (Indian Ocean) and Cocos (Keeling) Islands, Fiji, Gilbert, and Ellice Islands, New Zealand, Norfolk and Ocean Islands, Australian Territory of Papua and New Guinea, and Tonga.

Cholera – Cholera vaccination is required of all arrivals, 1 year of age and over, arriving from infected areas by air.

Yellow Fever – Yellow fever vaccination is required of arrivals, 1 year of age and over, from endemic areas.

ERRATUM, Vol. 17, No. 24, p. 223

In the article "Follow-up Obscure Disease Related to African Monkeys," the size of the granules resembling rickettsia should be (500-600 mμ) and not the (500-600μ) that appears.

THE MORBIDITY AND MORTALITY WEEKLY REPORT, WITH A CIRCULATION OF 17,000, IS PUBLISHED AT THE NATIONAL COMMUNICABLE DISEASE CENTER, ATLANTA, GEORGIA.

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IN ADDITION TO THE ESTABLISHED PROCEDURES FOR REPORTING MORBIDITY AND MORTALITY, THE NATIONAL COMMUNICABLE DISEASE CENTER WELCOMES ACCOUNTS OF INTERESTING OUTBREAKS OR CASE INVESTIGATIONS WHICH ARE OF CURRENT INTEREST TO HEALTH OFFICIALS AND WHICH ARE DIRECTLY RELATED TO THE CONTROL OF COMMUNICABLE DISEASES. SUCH COMMUNICATIONS SHOULD BE ADDRESSED TO:

NATIONAL COMMUNICABLE DISEASE CENTER
ATLANTA, GEORGIA 30333
ATTN: THE EDITOR
MORBIDITY AND MORTALITY WEEKLY REPORT

NOTE: THE DATA IN THIS REPORT, ARE PROVISIONAL AND ARE BASED ON WEEKLY TELEGRAMS TO THE NCDC BY THE INDIVIDUAL STATE HEALTH DEPARTMENTS. THE REPORTING WEEK CONCLUDES ON SATURDAY; COMPILED DATA ON A NATIONAL BASIS ARE RELEASED ON THE SUCCEEDING FRIDAY.

U.S. DEPARTMENT OF
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